

- Blend*
- c) setting the crucible in a vertical type of a heating furnace to heat the raw material;
  - d) melting the raw material;
  - e) promoting a nucleation on a surface of a raw material melt by leaving a solid raw material in a part of the raw material melt;
  - f) solidifying the raw material gradually from the surface of the raw material melt without a seed crystal; and
  - g) growing a crystal by using a nucleus generated by the nucleation.
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Please add the following new claims:

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2. (New) The process of claim 1, wherein the raw material is ZnTe or CdTe.

3. (New) The process of claim 1, wherein  $B_2O_3$  is used to encapsulate the raw material.

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4. (New) The process of claim 1, wherein nucleation occurs on a top surface of raw material melt.

5. (New) A single crystal produced by the process comprising the following steps:

- Dr cont*
- a) placing a compound semiconductor raw material into a crucible;
  - b) encapsulating the raw material;
  - c) setting the crucible in a vertical type of a heating furnace to heat the raw material;
  - d) melting the raw material;
  - e) promoting a nucleation on a surface of a raw material melt by leaving a solid raw material in a part of the raw material melt;
  - f) solidifying the raw material gradually from the surface of the raw material melt without a seed crystal; and
  - g) growing a crystal by using a nucleus generated by the nucleation.

6. (New) The crystal of claim 5, wherein the raw material is ZnTe or CdTe.

7. (New) The crystal of claim 5, wherein  $B_2O_3$  is used to encapsulate the raw material.

8. (New) The crystal of claim 5, wherein nucleation occurs on a top surface of raw material melt.

9. (New) The crystal of claim 5, wherein the crystal has a diameter of 70 mm and a total length of 50 mm.

10. (New) The crystal of claim 5, wherein the crystal has no twin or polycrystal.

*02/09/01*  
11. (New) The process of claim 1, wherein nucleation occurs on a surface adjacent to the raw material melt.

12. (New) The crystal of claim 5, wherein nucleation occurs on a surface adjacent to the raw material melt.

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